USFS SUMMIT VIEW CAMPGROUND (PWS 6040037)
SOURCE WATER ASSESSMENT FINAL REPORT

February 24, 2003

State of Idaho
Department of Environmental Quality

Executive Summary

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the act. This assessment is based on a land use inventory of the designated assessment areas and sensitivity factors associated with the spring and the aquifer characteristics.

This report, *Source Water Assessment for* USFS Summit View Campground*: Public Water System (PWS) #6040037* describes the PWS, the associated potential contaminant sources located within a 1,000-foot boundary around the drinking water source, and the susceptibility (risk) that may be associated with any associated potential contaminants. This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this system. **The results should <u>not be</u> used as an absolute measure of risk and is not intended to undermine the confidence in your water system.**

The USFS Summit View Campground (PWS # 6040037) is a transient drinking water system located in Bear Lake County approximately 6 miles northeast of Georgetown, near the end of Thompson Spring Road No. 20681. The system consists of one spring that supplies drinking water to the campground.

The Thompson Spring Road along with the ATV activity within the campground was considered a potential contaminant source due to the high volume during occasional usage events such as holiday weekends. If an accidental spill into this corridor occurred, inorganic chemical (IOC) contaminants, volatile organic chemical (VOC) contaminants, or synthetic organic chemical (SOC) contaminants could be added to the aquifer system. The sheep, which pass through the area, were also considered as potential contaminant sources for IOCs and microbial contaminants. These sources may contribute to the overall vulnerability of the water source.

Final spring susceptibility scores are derived from heavily weighting potential contaminant inventory/land use and system construction scores. Therefore, a low rating in one category coupled with a higher rating in the other category results in a final rating of low, moderate, or high susceptibility. Potential contaminants are divided into four categories: IOCs (i.e., nitrates), VOCs (i.e., petroleum products), SOCs (i.e., pesticides), and microbial contaminants (i.e., bacteria). As a spring can be subject to various contamination settings, separate scores are given for each type of contaminant.

For the assessment, a review of laboratory tests was conducted using the State Drinking Water Information System (SDWIS). No VOCs or SOCs have been detected in the spring water. The IOC nitrate has been detected in the water samples but at concentrations below the maximum contaminant level (MCL), as established by the EPA. Repeat detections of total coliform have occurred twice (August, 1991 and June, 1992) in the distribution system. The minimal number of total coliform detections may be a direct result of the water system's closure between 1993 and 2000.

In terms of total susceptibility, the spring rated automatically high for IOCs, low for VOCs and SOCs, and automatically high for microbial contaminants. System construction rated high for the spring. Potential Contaminant/Land Use scores were low for IOCs, VOCs, SOCs, and microbial contaminants.

The automatically high IOC and microbial ratings are due to grazing sheep within the 100-foot zone that is the sanitary setback distance required around the spring area.

This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses that require surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources. If the system should need to expand in the future, new well or spring sites should be located in areas with as few potential sources of contamination as possible, and the site should be reserved and protected for this specific use.

For the USFS Summit View Campground, drinking water protection activities should first focus on correcting any deficiencies outlined in the sanitary survey (an inspection conducted every five years with the purpose of determining the physical condition of a water system's components and its capacity). The system should protect the spring by replacing the screens on the overflows and vents and making the collection box lid airtight. As land uses within most of the source water assessment areas are outside the direct jurisdiction of the USFS Summit View Campground, collaboration and partnerships with state and local agencies and industry groups should be established and are critical to success. Educating the public about source water will further assist the system in its monitoring and protection efforts.

Due to the time involved with the movement of ground water, drinking water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. A strong public education program should be a primary focus of any drinking water protection plan. Public education topics could include household hazardous waste disposal methods and the importance of water conservation. There are multiple resources available to help water systems implement protection programs, including the Drinking Water Academy of the EPA. Drinking water protection activities for agriculture should be coordinated with the Idaho State Department of Agriculture, the Bear Lake County Soil and Water Conservation District, and the Natural Resources Conservation Service. For assistance in developing protection strategies please contact the Pocatello Regional Office of the Idaho Department of Environmental Quality.

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SOURCE WATER ASSESSMENT FOR USFS SUMMIT VIEW CAMPGROUND, GEORGETOWN, IDAHO

Section 1. Introduction - Basis for Assessment

The following sections contain information necessary to understand how and why this assessment was conducted. **It is important to review this information to understand what the ranking of this assessment means.** Maps showing the delineated source water assessment area and the inventory of significant potential sources of contamination identified within that area are included. The list of significant potential contaminant source categories and their rankings used to develop the assessment also is included.

Level of Accuracy and Purpose of the Assessment

The Idaho Department of Environmental Quality (DEQ) is required by the U.S. Environmental Protection Agency (EPA) to assess over 2,900 public drinking water sources in Idaho for their relative susceptibility to contaminants regulated by the Safe Drinking Water Act. This assessment is based on a land use inventory of the delineated assessment area, sensitivity factors associated with the spring and aquifer characteristics. All assessments must be completed by May of 2003. The resources and time available to accomplish assessments are limited. Therefore, an in-depth, site-specific investigation to identify each significant potential source of contamination for every public water supply system is not possible. **This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. The results should not be used as an absolute measure of risk and they should not be used to undermine public confidence in the public water system (PWS).**

The ultimate goal of the assessment is to provide data to local communities to develop a protection strategy for their drinking water supply system. DEQ recognizes that pollution prevention activities generally require less time and money to implement than treatment of a public water supply system once it has been contaminated. DEQ encourages communities to balance resource protection with economic growth and development. The decision as to the amount and types of information necessary to develop a drinking water protection program should be determined by the local community based on its own needs and limitations. Wellhead or drinking water protection is one facet of a comprehensive growth plan, and it can complement ongoing local planning efforts.

Section 2. Conducting the Assessment

General Description of the Source Water Quality

The USFS Summit View Campground (PWS # 6040037) is a transient drinking water system located in Bear Lake County approximately 6 miles northeast of Georgetown, near the end of Thompson Spring Road No. 20681. The system consists of one spring that supplies drinking water to the campground (see Figure 1).

No testing for volatile organic chemicals (VOCs) or synthetic organic chemicals (SOCs) are required for this system. The inorganic chemicals (IOCs) nitrate have been detected in the water samples but at concentrations below the maximum contaminant level (MCL), as established by the EPA. Repeat detections of total coliform have occurred twice (August, 1991 and June, 1992) in the distribution system. The minimal number of total coliform detections may be a direct result of the water system's closure between 1993 and 2000.

Defining the Zones of Contribution – Delineation

The delineation process establishes the physical area around a spring that will become the focal point of the assessment. The arbitrary-fixed radius method was used to delineate transient water systems (Idaho Source Water Assessment Plan, pg. 15 and E5-E6).

The delineation of a source water assessment area using the arbitrary fixed radius method involves drawing a circle around the drinking water source using a fixed distance that is identical for every source. The distance is typically set by statute and is often based on economic and political justification, as opposed to technical merit. This method is easy to implement, inexpensive, and the data requirements are minimal. The major disadvantage is the degree of uncertainty due to the lack of scientific basis for the selection of the distance. An additional disadvantage is that the application of a single standard to a wide range of PWSs with different characteristics can lead to delineations that inadvertently represent the source water assessment area.

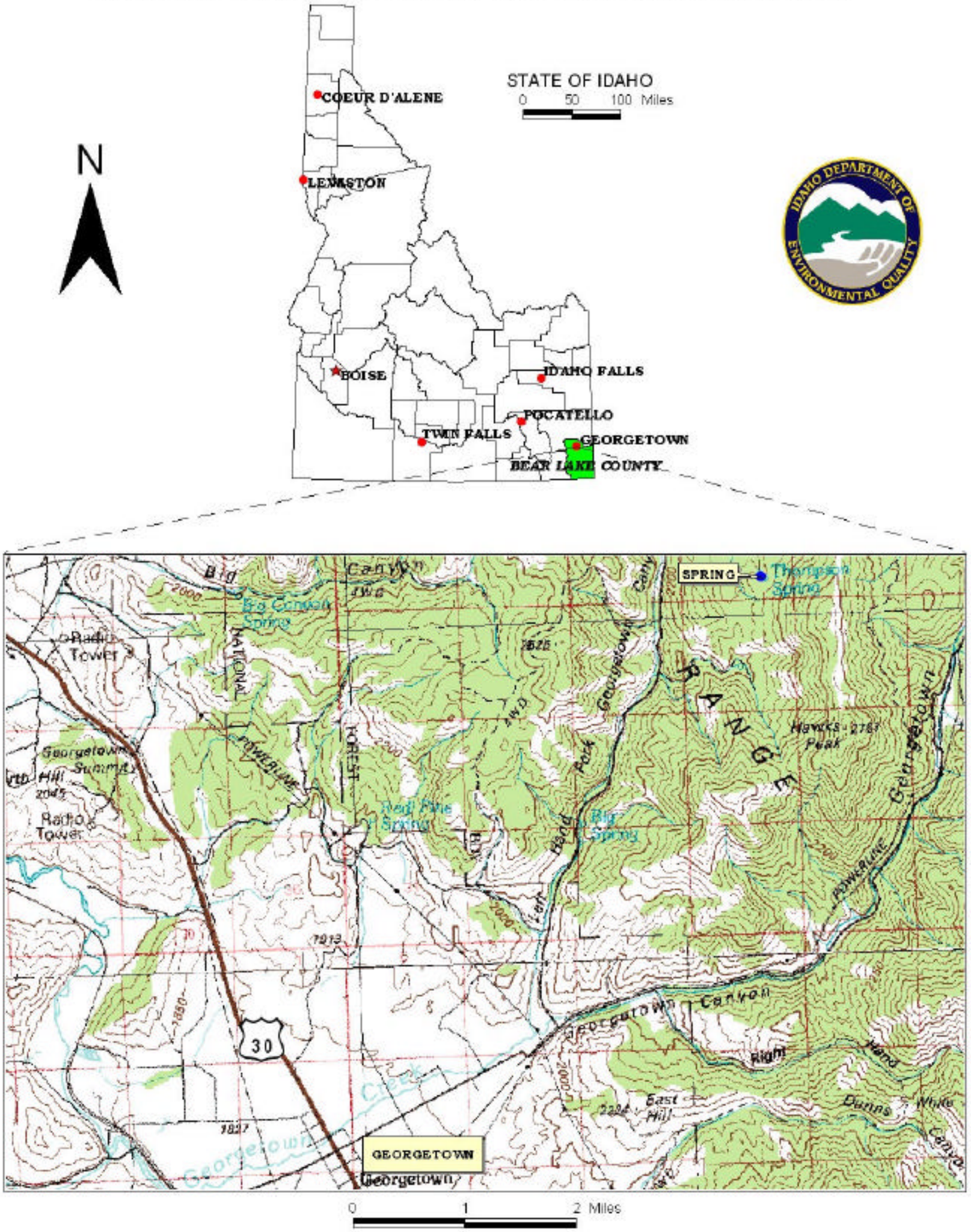
A Minnesota study showed that one-year time-of-travel (TOT) capture zones of transient non-community wells completed in unconfined porous sediments are unlikely to exceed 115 feet in the up-gradient direction (MDH, 1998). EPA recommends a one-year travel time to protect wellheads/spring sources from bacteria and viruses. To be conservative, DEQ applied a delineation of a 1,000-foot radius circle around each transient system's source. It is impractical to develop more intensive delineations for these systems because of limited resources for protection, and lack of jurisdiction over land use outside property boundaries.

Identifying Potential Sources of Contamination

A potential source of contamination is defined as any facility or activity that stores, uses, or produces, as a product or by-product, the contaminants regulated under the Safe Drinking Water Act. Furthermore, these sources have a sufficient likelihood of releasing such contaminants into the environment at levels that could pose a concern relative to drinking water sources. The goal of the inventory process is to locate and describe those facilities, land uses, and environmental conditions that are potential sources of ground water contamination. Field surveys conducted by DEQ and reviews of available databases identified potential contaminant sources within the delineated area.

It is important to understand that a release may never occur from a potential source of contamination provided they are using best management practices. Many potential sources of contamination are regulated at the federal level, state level, or both, to reduce the risk of release. Therefore, when a business, facility, or property is identified as a potential contaminant source, this should not be interpreted to mean that this business, facility, or property is in violation of any local, state, or federal environmental law or regulation. What it does mean is that the potential for contamination exists due to the nature of the business, industry, or operation. There are a number of methods that water systems can use to work cooperatively with potential sources of contamination, including educational visits and inspections of stored materials. Many owners of such facilities may not even be aware that they are located near a public water supply source.

FIGURE 1. Geographic Location of the USFS Summit View CG



Contaminant Source Inventory Process

A contaminant inventory of the study area was conducted in January 2003. This involved identifying and documenting potential contaminant sources within the USFS Summit View Campground source water assessment area through the use of field surveys, computer databases and Geographic Information System (GIS) maps developed by DEQ.

An inventory of potential contaminant sources is included in Table 1 below. Sources include Thompson Spring Road and the ATV activity within the campground, and the sheep, which frequent the area. These sources could potentially contribute IOCs, VOCs, SOCs, and microbials, as well as leachable contaminants to the aquifer. A map with the spring source location, delineated area, and potential contaminant source is provided with this report (Figure 2).

Table 1. USFS Summit View Campground, Spring, Potential Contaminant Inventory

Source Description	TOT Zone[1] (years)	Source of Information	Potential Contaminants[2]
Thompson Spring Road, ATV activity	0-3	2001 Sanitary Survey	IOC, VOC, SOC, Microbial
Sheep	0-3	2001 Sanitary Survey	IOC, Microbial

[1] TOT = time-of-travel (in years) for a potential contaminant to reach the spring source

[2] IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

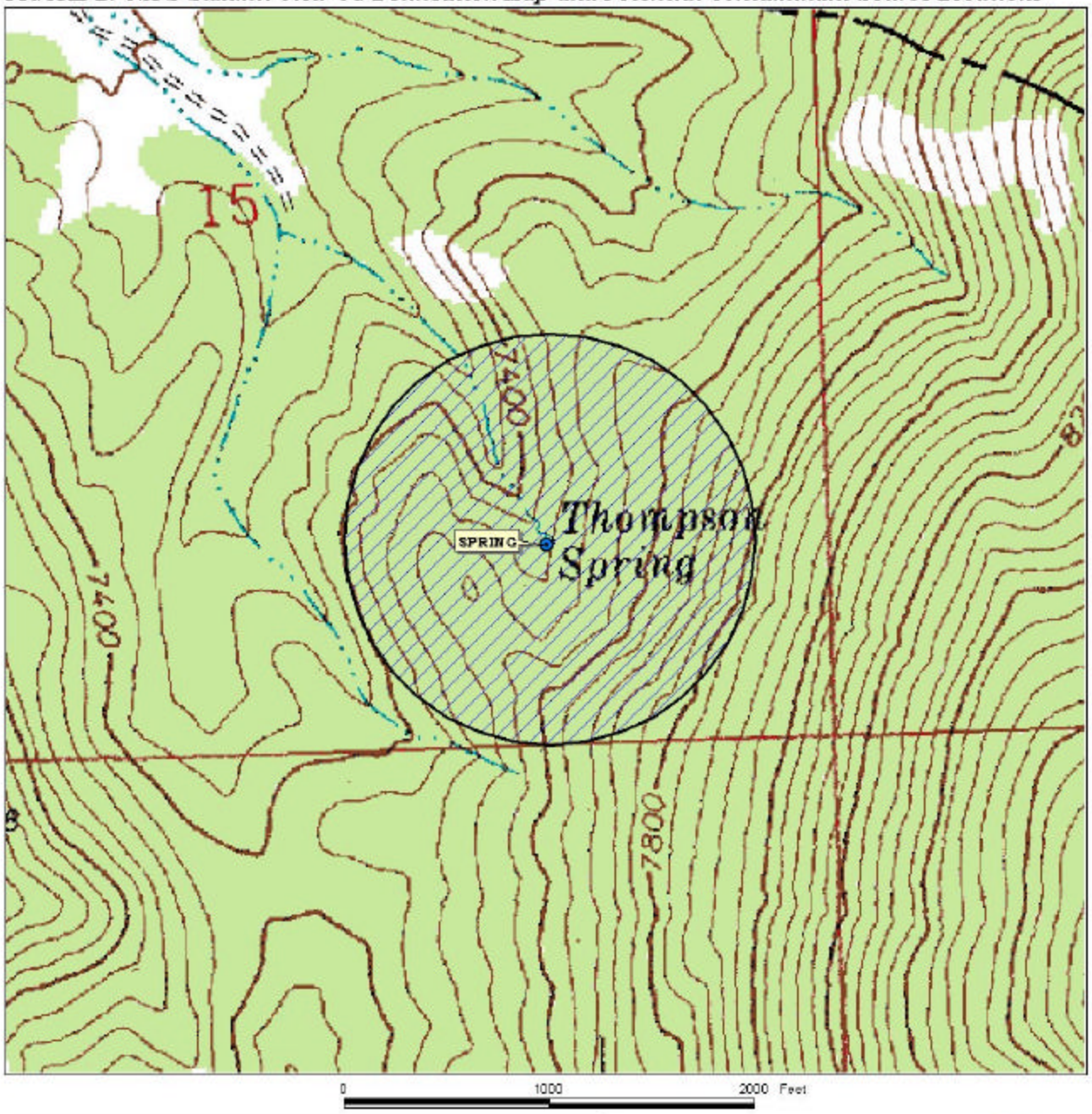
Section 3. Susceptibility Analysis

The susceptibility of the spring to contamination was ranked as high, moderate, or low risk according to the following considerations: system construction, land use characteristics, and potentially significant contaminant sources. The susceptibility rankings are specific to a particular potential contaminant or category of contaminants. Therefore, a high susceptibility rating relative to one potential contaminant does not mean that the water system is at the same risk for all other potential contaminants. The relative ranking that is derived for the spring is a qualitative, screening-level step that, in many cases, uses generalized assumptions and best professional judgement. Attachment A contains the susceptibility analysis worksheet. The following summaries describe the rationale for the susceptibility ranking.

Spring Construction

Spring construction scores are determined by evaluating whether the spring has been constructed according to Idaho Code (IDAPA 58.01.08.04) and if the spring's water is exposed to any potential contaminants from the time it exits the bedrock to when it enters the distribution system. If the spring's intake structure, infiltration gallery, and housing are located and constructed in such a manner as to be permanent and protect it from all potential contaminants, is contained within a fenced area of at least 100 feet in radius, and is protected from all surface water by diversions, berms, etc., then Idaho Code is being met and the score will be lower. If the spring's water comes in contact with the open atmosphere before it enters the distribution system, it receives a higher score. Likewise, if the spring's water is piped directly from the bedrock to the distribution system or is collected in a protected spring box without any contact to potential surface-related contaminants, the score is lower.

FIGURE 2. USFS Summit View CG Delineation Map and Potential Contaminant Source Locations



The spring was originally constructed in approximately 1935, and was redeveloped in 1979. The 2001 sanitary survey described the collection area in the following manner: "The 4-inch perforated PVC pipes are two parallel 'open V' shaped lines, 18-inches apart, extending 12 feet from the center of the 'V', on each side. A two-foot high fiberglass cut-off wall parallels the perforated collection pipe. A diversion ditch above the collection area is lined with a strip of EPDM liner." The spring area is fenced 28 feet from the collection area. The collected water flows through a 4-inch PVC pipe to an 82-gallon steel collection box. The collection box is equipped with a shoebox type lid that is secured with a chain and lock, a steel vent pipe, a drainline, and a discharge to daylight.

The spring rated high for construction. Surface water has been diverted from the collection area. The 2001 sanitary survey noted that all the screens are missing from the collection box pipes and the collection box's lid is not watertight. Although the spring is fenced, the fence is not big enough to protect a 100-foot sanitary setback surrounding the collection area. Based on the collection area description in the 2001 sanitary survey, it is unknown if the collected water is exposed to the atmosphere between the bedrock and the distribution system, so a higher, more conservative score was given.

Potential Contaminant Source and Land Use

The spring rated low for IOCs (i.e., nitrates), VOCs (i.e., petroleum products), SOCs (i.e., pesticides), and microbial contaminants (i.e., bacteria). The absence of irrigated agricultural land and the low number of potential contaminant sources within the delineation contributed to the low land use scores.

Final Susceptibility Ranking

A detection above a drinking water standard MCL, any detection of a VOC or SOC, or a confirmed microbial detection at the spring will automatically give a high susceptibility rating to the spring, despite the land use of the area, because a pathway for contamination already exists. Additionally, potential contaminant sources within 100 feet of a spring will automatically lead to a high susceptibility rating. In this case, the spring rated automatically high for IOC and microbials due to the sheep activity within the sanitary setback distance.

Table 2. Summary of USFS Summit View Campground Spring Susceptibility Evaluation

Drinking Water Source	Susceptibility Scores[1]								
	Potential Contaminant Inventory and Land Use				System Construction	Final Susceptibility Ranking			
	IOC	VOC	SOC	Microbials		IOC	VOC	SOC	Microbials
Spring	L	L	L	L	H	H*	L	L	H*

[1]**H = High Susceptibility, M = Moderate Susceptibility, L = Low Susceptibility**
IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical
H* = automatically high rating due to sheep activity within sanitary setback of spring

Susceptibility Summary

In terms of total susceptibility, the spring rated automatically high for IOCs, low for VOCs and SOCs, and automatically high for microbial contaminants. System construction rated high for the spring. Potential Contaminant/Land Use scores were low for IOCs, VOCs, SOCs, and microbial contaminants. The automatically high IOC and microbial ratings are due to sheep within the 100-foot zone that is the sanitary setback distance required around the spring area.

This system is not required to test for VOCs or SOCs in the drinking water. The IOC nitrate has been detected in the water samples but at concentrations below the MCL, as established by the EPA. Repeat detections of total coliform have occurred twice (August, 1991 and June, 1992) in the distribution system. The minimal number of total coliform detections may be a direct result of the water system's closure between 1993 and 2000.

Section 4. Options for Drinking Water Protection

This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses that require surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources. If the system should need to expand in the future, new well or spring sites should be located in areas with as few potential sources of contamination as possible, and the site should be reserved and protected for this specific use.

For the USFS Summit View Campground, drinking water protection activities should first focus on correcting any deficiencies outlined in the sanitary survey. The system should protect the spring by replacing the screens on the overflows and vents, and making the collection box lid airtight. As land uses within most of the source water assessment areas are outside the direct jurisdiction of the USFS Summit View Campground, collaboration and partnerships with state and local agencies and industry groups should be established and are critical to success. Educating campground employees and the public about source water will further assist the system in its monitoring and protection efforts.

Due to the time involved with the movement of ground water, drinking water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. A strong public education program should be a primary focus of any drinking water protection plan. Public education topics could include household hazardous waste disposal methods and the importance of water conservation. There are multiple resources available to help communities implement protection programs, including the Drinking Water Academy of the EPA. Drinking water protection activities for agriculture should be coordinated with the Idaho State Department of Agriculture, the Bear Lake Soil and Water Conservation District, and the Natural Resources Conservation Service. For assistance in developing protection strategies please contact the Pocatello Regional Office of the DEQ.

Assistance

Public water supplies and others may call the following DEQ offices with questions about this assessment and to request assistance with developing and implementing a local protection plan. In addition, draft protection plans may be submitted to the DEQ office for preliminary review and comments.

Pocatello Regional DEQ Office (208) 236-6160

State DEQ Office (208) 373-0502

Website: http://www.deq.state.id.us

POTENTIAL CONTAMINANT INVENTORY LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLA – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as Superfund is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100-year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.)

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5 mg/l.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25% of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RCRA – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

References Cited

Idaho Department of Environmental Quality. 2000. Design Standards for Public Drinking Water Systems. IDAPA 58.01.08.550.01.

Idaho Division of Environmental Quality, 1997, Idaho Wellhead Protection Plan, Idaho Wellhead Protection Work Group, February.

Idaho Division of Environmental Quality Ground Water Program, October 1999. Idaho Source Water Assessment Plan.

Safe Drinking Water Information System (SDWIS). Idaho Department of Environmental Quality.

USFS. 2001. Sanitary Survey for Summit View Campground: PWS #6040037.

Attachment A

USFS Summit View Campground Susceptibility Analysis Worksheet

Susceptibility Analysis Formulas

Formula for Spring Sources

The final spring scores for the susceptibility analysis were determined using the following formulas:

1) VOC/SOC/IOC Final Score = (Potential Contaminant/Land Use X 0.818) + System Construction

2) Microbial Final Score = (Potential Contaminant/Land Use X 1.125) + System Construction

Final Susceptibility Scoring:

0 - 7 Low Susceptibility
8 - 14 Moderate Susceptibility
≥ 15 High Susceptibility

Spring Water Susceptibility Report Public Water System Name: USFS Summit View Campground Spring
Public Water System Number 6210001 01/12/2003 3:40:13 PM

1. System Construction		SCORE
Intake structure properly constructed	NO	1
Is the water first collected from an underground source Yes = spring developed to collect water from beneath the ground; lower score No = water collected after it contacts the atmosphere or unknown; higher score	NO	2
Total System Construction Score		3

2. Potential Contaminant Source / Land Use		IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	RANGELAND/WOODLAND	0	0	0	0
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	YES	YES	NO	NO	YES
Total Potential Contaminant Source/Land Use Score - Zone 1A		0	0	0	0
Potential Contaminant / Land Use - ZONE 1B					
Contaminant sources present (Number of Sources)	YES	2	1	1	2
(Score = # Sources X 2) 8 Points Maximum		4	2	2	4
Sources of Class II or III leacheable contaminants or	YES	2	1	1	
4 Points Maximum		2	1	1	
Zone 1B contains or intercepts a Group 1 Area	YES	0	0	0	0
Land use Zone 1B	Less Than 25% Irrigated Agricultural Land	0	0	0	0
Total Potential Contaminant Source / Land Use Score - Zone 1B		6	3	3	4
Cumulative Potential Contaminant / Land Use Score		5	2	2	5
4. Final Susceptibility Source Score		8	5	5	8
5. Final Spring Ranking		High	Low	Low	High